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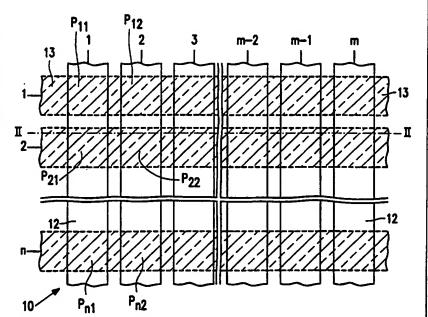
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(54) Title: DISPLAY DEVICE

(57) Abstract

Control device for an electroluminescent display device, comprising an active layer of a semiconducting polymer of, for example, pixels arranged in the form of a matrix, reducing flicker and crosstalk. The control device may be based on voltage control at which voltages across the pixels are at least 1.6 V. but is preferably based on current control, at which the duration of the data pulses determines the grey level.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 96/00414

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: G09G 3/30
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: G09G, G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCU	MENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Υ	WO 9516275 A1 (THE REGENTS OF THE UNIVERSITY OF CALIFORNIA), 15 June 1995 (15.06.95), page 3, line 33 - line 34; page 4, line 10 - line 11; page 4, line 16 - line 18, page 3, line 14-19; page 6 line 15-17; page 7, line 27-29; page 14, line 27-29; page 9, line 33	1-9
Y	US 4866348 A (SHARP KABUSHIKI KAISHA), 12 Sept 1989 (12.09.89), column 2, line 51 - line 54; column 4, line 2 - line 7	1
	·	
Y	US 4839563 A (GTE PRODUCTS CORPORATION), 13 June 1989 (13.06.89), column 1, line 23 - line 26; column 1, line 39 - line 54; column 6, line 24 - line 29	1-9
	~~	

X	Further documents are listed in the continuation of Box	C.	X See patent family annex.		
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International application No. PCT/IB 96/00414

	PC1/18 96/	00717
C (Continu	nation). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0111566 A1 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD), 18 May 1983 (18.05.83), page 15, line 25 - line 27; page 16, line 1 - line 2	8
A	US 4349816 A (USA AS REPRESENTED BY THE SECRETARY OF THE ARMY), 27 March 1981 (27.03.81)	
		
A	US 3807036 A (USA AS REPRESENTED BY THE SECRETARY OF THE ARMY), 30 November 1972 (30.11.72)	
		
A	US 3343128 A (R.J. ROGERS), 27 June 1963 (27.06.63)	
	~~	
Y	EP 0457440 A2 (THE CHERRY CORPORATION), 18 April 1991 (18.04.91), column 9, line 29 - line 38	4,5
	₩₩	
A	WO 9113381 A1 (MOLECULAR DISPLAYS INC.), 5 Sept 1991 (05.09.91)	·
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i		

INTERNATIONAL SEARCH REPORT

Information on patent family members

28/10/96

International application No. PCT/IB 96/00414

Patent document cited in search report		Publication date		Patent family member(s)	
10-A1-	9516275	15/06/95	US-A-	5504323	02/04/96
JS-A-	4866348	12/09/89	DE-A,C-	3511886	03/10/85
			GB-A,B-	2158982	20/11/85
			JP-C-	1822773	10/02/94
			JP-B-	5028385	26/04/93
			JP-A-	60208798	21/10/85
			JP-C-	1822776	10/02/94
			JP-B-	5028386	26/04/93
			JP-A-	60216389	29/10/85
IS-A-	4839563	13/06/89	EP-A-	0295477	21/12/88
			JP-A-	1193798	03/08/89
P-A1-	0111566	18/05/83	CA-A-	1250038	14/02/89
			JP-C-	1810642	27/12/93
			JP-B-	5016158	03/03/93
			JP-A-	59175593	04/10/84
			US-A-	4634934	06/01/87
			US-A-	4814668	21/03/89
			WO-A-	8304123	24/11/83
			JP-C-	1468076	30/11/88
		*	JP-A-	58201294	24/11/83
S-A-	4349816	27/03/81	CA-A-	1165482	10/04/84
S-A-	3807036	30/11/72	US-A-	3913090	14/10/75
S-A-	3343128	27/06/63	NONE		
P-A2-	0457440	18/04/91	JP-A-	4229895	19/08/92
0-A1-	9113381	05/09/91	A-U-A-	7475691	18/09/91
		• •	CA-A-	2037014	27/08/91
			EP-A-	0531298	17/03/93
			US-A-	5189549	23/02/93
			US-A-	5444330	22/08/95
			US-A-	5457564	10/10/95